

Appendix B

Facility Databases

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Appendix B

Facility Databases

B.1 FACILITY LINKAGE APPLICATION

The Facility Linkage Application (FLA) application in the Envirofacts Warehouse provides the interface and processes to link facilities monitored by multiple EPA program systems. FLA supports an integrated search and retrieval of environmental data about a facility across program office systems by establishing linkages with program office system identifiers. FLA assists regulatory and enforcement actions by providing linkages to locational data (i.e., latitude, longitude, and associated metadata) and historical records that enable tracking of environmental activities by facility and responsible organizations. In addition, FLA enables states to integrate State and national environmental data for regulated facilities.

AILESP Facility Data from FLA	
Field Name	Description
FACILITY_UIN	The non-intelligent, unique identification number (UIN) assigned to a facility or complex facility.
PGM_SYS_ID	The identification number, including permit number, assigned by an information management system that represents a facility, waste site, operable unit, or other feature regulated or monitored by that program system.
PGM_SYS_ACRNM	The code of an information management system for an environmental program. (e.g., AFS, PCS, BRS, RCR, TRI)

B.2 MEDIA-SPECIFIC RELEASE AND STORAGE DATA

Pollutant release and storage data were retrieved directly or derived from the original media-specific databases. This section provides a brief overview of the scope of each database used, a list of the data elements pulled or derived from the original databases, and the methodologies used to derive data elements.

AIRS Facility Subsystem (AFS)

The AIRS Facility Subsystem (AFS) is a component of the Aerometric Information Retrieval System (AIRS). AIRS is a computerized database management system for airborne pollution in the United States consisting of four subsystems. Each subsystem addresses a different (but in many cases related) aspect of the regulatory requirements of the Clean Air Act, as amended in 1990. AFS contains emissions, compliance, and enforcement data on stationary sources of air pollution. Regulated sources cover the spectrum from large industrial facilities to relatively small operations such as dry cleaners. EPA's Office of Air Quality Planning and Standards (OAQPS) maintains AFS on EPA's IBM mainframe computer in a set of ADABAS files. These files are accessible via menus under the Customer Information Control System (CICS).

AFS was created by merging two older databases, the Compliance Data Systems (CDS) and the National Emissions Data System (NEDS). Since these two data systems are independent of each other, it is possible for a facility to be tracked by one system and not the other (i.e., a facility could be tracked for emissions or compliance information but not necessarily both). For this reason AFS facilities are sometimes referred to as compliance facilities and/or emissions facilities.

In general, facilities collect emissions data as a condition of their permits. Facility emissions data are sent to their cognizant (usually state) environmental agency. Such agencies then consolidate data from all active permits and send them to their EPA Regional Office, where they are uploaded to AFS. States sometimes send inspectors to collect emissions data. Some emissions data are based on actual measurement; others are based on estimation methods such as mass balance.

Most facilities prepare emissions inventories only once every five years. Therefore, AFS carries a Year of Inventory (YINV) field that identifies the year the data were collected. A snapshot of AFS data for 1999, for instance, would include data collected in 1999 and previous years. Only the most recent year of data for any facility would appear. This study used a snapshot of AFS data taken in August of 1999. AFS stores data from past years, however, AILESP only used the most recent snapshot.

AFS includes emissions data for the following substances:

Volatile Organic Compounds (VOCs),
Particulate Matter Total (PT),
Particulate Matter (<10 µm) (PM10),
Sulfur Dioxide (SO₂),
Nitrogen Oxides (NO₂),

Carbon Monoxide (CO),
Lead (Pb)

In addition, AFS contains occasional data for about 100 other chemicals. AFS stores each data entry in one of eight units of measure: tons per day/week/month/year, or pounds per day/week/month/year. AILESP converted all units to pounds per year (LBY).

AILESP combined three levels of AFS data: plant level, stack (point) level, and segment level. Plant level compliance data is required and therefore reviewed nationally. Point level compliance data is not required and is not reviewed nationally. Therefore, point level compliance data is not nationally reliable. AILESP extracted the following information for each AFS data level:

- Plant – Facility ID, name, address, lat-long, Standard Industrial Classification (SIC1), YINV, EPA ID, operating status (OPST);
- Stack – Facility ID, stack ID, stack parameters; and,
- Segment – Facility ID, stack ID, Source Classification Code (SCC), chemical, amount.

AFS generates IDS by combining four data variables:

STTE – State two-digit Federal Information Processing Standard (FIPS) Code

CNTY – County three-digit FIPS code

PCDS – Old CDS ID

PNED – Old NEDS ID

AILESP retrieved the following data elements from AFS:

AILESP Release Data from AFS	
Field Name	Description
AFS_ID	14 character field composed of STTE-CNTY-PCDS-PNED
SIC	Primary SIC code from AFS
NAME	AFS plant name
POLLUTAN	AFS plant pollutant code
REL_AMT	Release amount in pounds per year
YEAR	Year of emissions inventory

Permit Compliance System (PCS)

The Permit Compliance System (PCS) is an automated information management system maintained by the Office of Compliance to track the permit compliance and enforcement status of facilities regulated by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act. PCS also contains monitoring data for discharge parameters specified in the permit. PCS is designed to support the NPDES program at the state, regional, and national levels.

Facilities typically submit discharge data in the form of monthly Discharge Monitoring Reports (DMRs). Discharge amounts can be reported as either daily or monthly average concentrations (e.g., milligrams per liter, or parts per million) or as daily or monthly average loadings (e.g., pounds per day or kilograms per day). To estimate monthly loadings with standard units we used the Effluent Data Statistics (EDS) system, developed by Steve Rubin (Office of Enforcement and Compliance, US EPA). EDS was used to accomplish the following:

- extract data from PCS such that a single observation represents the measurement of one parameter (chemical, physical, biological, etc.) from one discharge pipe for one month;
- convert various PCS measurements into standard units; and
- multiply flow and concentration data to estimate monthly loadings.

AILESP aggregated annual loadings by parameter across discharge pipes for each NPDES permit. The PCS release data extracted for the AILESP database represent releases during the 1997 calendar year. AILESP retrieved (or derived) the following data from PCS for 1997:

AILESP Release Data from PCS	
Field Name	Description
PCS_ID	NPDES ID
NAME	Name of facility from PCS
SIC	Primary four digit SIC code from PCS
PRAMNAME	Parameter name associated with PCS parameter code
CAS	Chemical Abstracts Service (CAS) Registry Number linked to PCS parameter code
POLLUTANT	Pollutant name associated with CAS
DSCH	Discharge number from PCS pipe schedule
KGY0	Total loadings per year (kg/yr) assuming 0 for measurements below detection limit
KGY1	Total loadings per year (kg/yr) assuming detection limit for measurements below detection limit
KGYL	Total loadings over limit for year assuming 0 for measurements below detection limit

Toxics Release Inventory System (TRIS)

The Toxics Release Inventory System (TRIS) is a facility level database created under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. The law is based on the premise that citizens have the right to know about potentially harmful chemicals in their communities. TRIS has two main purposes: 1) to provide information with which to plan for responses to chemical accidents; and 2) to provide the public and the government with information about possible chemical hazards.

Under §313 of EPCRA, manufacturing facilities with ten or more full-time employees that meet the established manufacture, process, or otherwise use thresholds for listed chemicals must report their releases and transfers for those chemicals. The manufacture/process threshold is currently 25,000 pounds per year for each listed chemical, while the otherwise use threshold is 10,000 pounds per year. Manufacturing facilities include, among others: chemical manufacturers, petroleum refining, primary metals, fabricated metals, paper, rubber and plastics, and transportation equipment. TRIS does not require facilities to monitor their releases, although that is the preferred source of release information. Instead, EPA provides guidelines for estimating releases along with the TRIS reporting package.

The table below lists the data elements that AILESP retrieved (or derived) from TRIS.

AILESP Release Data from TRIS	
Field Name	Description
TRI_ID	15 character TRI ID
NAME	Facility name listed in TRIS
CAS	Chemical Abstracts Service (CAS) Registry Number
CHEMICAL	Discharged chemical name
NONPTAIR	Non-point (fugitive) air release (lbs/yr)
POINTAIR	Point (stack) air release (lbs/yr)
WATER	Discharges to surface waste (lbs/yr)
UNDGRND	Underground injection (lbs/yr)
LAND	Discharges to land (lbs/yr)
TOTAL	Total discharge (lbs/yr)
SPILL	Accidental discharge (lbs/yr)
YR	Reporting year
SIC	Primary 4 digit SIC code

Biennial Reporting System (BRS)

The Resource Conservation and Recovery Act (RCRA), which established a statutory definition of hazardous waste, directs the EPA and the States to compile information on the operations of hazardous waste handlers. In 1984, the Hazardous and Solid Waste Amendment (HSWA) required all hazardous waste generators and treatment, storage, and disposal (TSD) facilities that handle hazardous waste to report to the EPA Administrator at least once every two years. The Biennial Reporting System (BRS) database has been developed from these filings. The main goal of BRS is to establish accurate monitoring of the activities of both hazardous waste generators and waste management facilities.

The data are reported to BRS by categories of waste stream that are either generated, received, managed, or shipped. These waste streams can be either 100 percent RCRA-listed wastes, or a mixture of one or more hazardous substances contained at various concentrations in a non-hazardous matrix (e.g., railroad gravel or water). In addition, a waste stream can be described by multiple RCRA waste codes (e.g., a waste stream can simultaneously be ignitable, contain spent halogenated solvents, contain benzene, etc.). At

present, there is no mechanism to apportion the waste stream volume to particular waste codes where multiple codes are reported. The waste codes that qualify as hazardous under BRS include:

- characteristic (e.g., ignitable, corrosive, and reactive),
- individual chemical (e.g., arsenic, chromium, lead, etc.), and
- process by-products (e.g., distillation still bottoms).

The AILESP database includes those waste streams containing toxic chemicals only, or toxic chemicals in addition to characteristic and/or process by-product waste codes. The AILESP database does not include waste streams containing only characteristic and/or process by-product waste codes, and contains only the first fifteen waste codes listed for a waste stream. AILESP extracted 1997 BRS data. This data represents the most recent data available at the time of extraction.

The data provided in BRS are not release data, but rather an indication of the existence of hazardous waste at a site. Furthermore, the data provided in BRS does not indicate the ultimate fate of the hazardous waste reported. For example, those waste streams reported as received or managed may subsequently be shipped elsewhere. Therefore, data from BRS should be interpreted as an indication of the throughput of hazardous wastes at a site, with the potential for release to the environment following treatment or accidental release.

The table below lists the data elements that AILESP extracted from BRS.

AILESP Release Data from BRS	
Field Name	Description
BRS_ID	12 character BRS ID
NAME	Facility name
SIC	Primary 4 digit SIC code
FORM	Code indicating which BRS form information came from (e.g, GM=Waste Generation and Management Form, WR=Waste Received from Off-Site Form)
WSTE_TYP	Wastewater or Not wastewater
LBSGEN	Pounds of waste generated on site
LBSRES	Pounds of waste received
LBSMNG	Pounds of waste managed on-site
LBSSHIP	Pounds of waste shipped off-site

AILESP Release Data from BRS	
Field Name	Description
RECNO	Record number
STRM1-15	First 15 waste codes listed in waste stream

B.3 MULTIMEDIA ENFORCEMENT AND COMPLIANCE DATA

AILESP retrieved all enforcement and compliance data from the Office of Enforcement and Compliance's (OECA's) Integrated Data for Enforcement Analysis (IDEA) System. OECA developed IDEA in response to an identified need for integrated enforcement and compliance data on facilities that may be involved with one or more EPA programs. IDEA provides data on all (multimedia) permits linked via the FLA (a.k.a. the Facility Indexing Initiative (FII) tables). Because it is a multimedia system, it was advantageous to use IDEA rather than query the program office databases separately. The current version of the AILESP database contains enforcement and compliance data for AFS, PCS, and RCRIS. (For a description of these media program databases, see Section C.2). Future versions of AILESP may be expanded to include data from other databases, such as the National Compliance Database (NCDB), the Site Enforcement Tracking System (SETS), and the Civil Enforcement Docket System (DOCKET).

In keeping with the Access and Security procedures outlined in the IDEA policy memorandum (originally published in October 1991 by Gerald A. Bryan, Director, Office of Compliance Analysis and Program Operations), the AILESP database recognizes two levels of EPA program office enforcement data: non-sensitive and sensitive. OECA, in conjunction with each national system administrator, identifies the data that each program office has determined to be enforcement sensitive. AILESP contains only non-sensitive enforcement and compliance data

The enforcement and compliance data stored in AILESP is current through the following dates:

AFS	July 19, 1999
PCS	July 19, 1999
RCRIS	July 18, 1999
FLA (FII)	July 19, 1999

AILESP derived the following five enforcement and compliance measures for AFS and RCRIS using IDEA:

- number of inspections in last two years;
- number of days since last inspection;
- number of federal and state administrative and judicial enforcement actions in last two years;
- number of fiscal quarters in noncompliance (NC) out of last eight quarters of record (two years); and
- significant noncompliance (SNC) indicator for the most recent quarter of record.

Each program database has its own definition of noncompliance (NC) and significant noncompliance (SNC). The definitions used by each program database for NCs and SNCs are presented below along with descriptions of the other enforcement and compliance data pulled from each database. EPA commonly uses a “compliance quarter” to characterize a facility’s compliance history. For example, if a permit has one or more noncompliance events in a fiscal quarter, then that quarter is counted as a quarter of noncompliance. Significant noncompliance involves a more serious violation and is a subset of noncompliance. IDEA tracks of the last eight quarters (2 years) of facility compliance status for each of the program databases.

AIRS Facility Subsystem (AFS)

Inspections

AILESP used the following AFS *National Action Types* to define the number of inspections in the last two years and the number of days since last inspection:

- EPA inspections
- EPA source test conducted
- State inspections
- State source test conducted

Enforcement Actions

The number of enforcement actions represents both administrative and judicial enforcement actions issued by the Federal Government and the States. This number does not include Notices of Violation (NOVs).

Compliance Quarters

The occurrence of any of the following values in the Historical Compliance Status variable in IDEA indicate a noncompliance status for the quarter:

- 1 = In Violation;
- 6 = In Violation, Not Meeting Schedule;
- 7 = In Violation, Unknown w/Regard to Schedule;
- B = In Violation, w/Regard to Emissions and Procedure; or
- W = In Violation, w/Regard to Procedural Compliance.

An AFS ID is considered a significant violator (SV) when any of the Compliance Status codes listed above (1, 6, 7, B, or W) co-occur with the following values in the AFS Significant Violator Flag (SVIL):

- S = State has Lead Enforcement;
- B = EPA/State have shared enforcement;
- X = Lead Enforcement Not Determined;
- C = Source w/SVIL=B that changed Compliance Status Code from 1 or 6 to 5, 7, or 0;
- F = Source w/SVIL=E that changed Compliance Status Code from 1 or 6 to 5, 7, or 0;
- F = Source w/SVIL=S that changed Compliance Status Code from 1 or 6 to 5, 7, or 0;

The table below lists the AFS data elements that AILESP extracted or derived from the AFS data stored in IDEA.

AILESP Enforcement and Compliance Data from AFS	
Field Name	Description
SIC1	Primary four digit SIC code from AFS
SNC	Text flag indicating facility is currently in Significant Noncompliance
QRTVIOL	Number of fiscal quarters in noncompliance out of last eight quarters of record
DAYS	Days since last inspection
FED_ENF	Number of Federal enforcement actions in last two years
STATE_ENF	Number of State enforcement actions in last two years
FEDREP	Flag indicating whether facility is federally reportable
OPST	Operating status of facility
APC1	Air program code
GOVT	Government facility code

Permit Compliance System (PCS)

Inspections

AILESP used the following PCS inspection codes to determine the number of inspections in the last two years and the number of days since last inspection:

- Contractor;
- Corps of Engineers;
- Joint EPA and State (EPA lead);
- National Enforcement Investigations Center (NIECE);
- EPA (Regional);
- State; and
- Joint EPA & State (State lead).

Enforcement Actions

The number of enforcement actions represents both administrative and judicial enforcement actions issued by the Federal Government and the States. This number does not include Notices of Violation (NOVs).

Compliance Quarters

There are two variables in PCS that factor into the compliance status of a facility in terms of its NPDES permit(s). IDEA maintains historical data for these two sets of variables so that the last eight quarters of compliance can be retrieved from any quarter (e.g., if the most recent quarter of noncompliance available is for the second quarter, then the first two quarters of the present year, the four quarters of the previous year, and the last two quarters of the year before that would be used). The following codes in any of the eight fiscal quarters represented by these two variables indicate a noncompliance status for the quarter:

- D = DMR Receipt;
- E = Effluent Violation;
- N = Violations Only;
- S = Compliance Schedule Violation; or
- T = Compliance Schedule Report.

Significant noncompliance is a subset of noncompliance and is defined by the values D, E, S, and T from above.

The following is a list of the AILESP data elements that were retrieved or derived from the PCS data stored in IDEA:

AILESP Enforcement and Compliance Data from PCS	
Field Name	Description
SIC	Primary four digit SIC from PCS
SNC	Text flag indicating facility is currently in Significant Noncompliance
QRTVIOL	Number of fiscal quarters in noncompliance out of last eight quarters of record
DAYS	Days since last inspection
FED_ENF	Number of Federal enforcement actions in last two years
STATE_ENF	Number of State enforcement actions in last two years
MAJOR	Indicates whether facility is a major or minor discharger
ACTIVE	Indicates whether facility is currently active or not
EPST	Indicates whether permit was issued by state or EPA
PTYP	Permit type (e.g., standard, general, unpermitted)
TYPO	Ownership classification (e.g., private vs federal)
FTYP	Facility type (e.g., industrial, municipal, federal)

Resource Conservation and Recovery Information System (RCRIS)

Inspections

The number of RCRIS inspections in the last two years and the number of days since last inspection are based on inspections made by the following agencies:

- EPA personnel;
- EPA contractor;
- State personnel;

- State contractor; and
- Oversight inspections made by EPA to monitor State compliance and enforcement programs

Enforcement Actions

The number of enforcement actions represents both administrative and judicial enforcement actions issued by the Federal Government and the States. This number does not include Notices of Violation (NOVs).

Compliance Quarters

A permit in RCRIS is considered to be in **non-compliance** for any quarter in which there is a violation date and no corresponding resolved date, and is considered out of compliance for each quarter thereafter until there is a resolved date. A RCR permit is considered to be in **significant non-compliance** in the most recent compliance quarter of record when the non-compliance criteria are met (i.e., a violation date without a corresponding resolved date), and the Violation priority Indicator has the following value:

9 = Unresolved High Priority Violations

The following is a list of the AILESP data elements that were retrieved or derived from the RCRIS data stored in IDEA.

FIELD	DESCRIPTION
NPDES	National Pollutant Discharge Elimination System (NPDES) permit number
DAYS	Days since last inspection
ENF_ACTS	Number of federal and state enforcement actions in last 2 years
NC_QUART	Number of fiscal quarters in non-compliance (NC) out of last eight quarters of record
SNCS	Significant non-compliance (SNC) indicator for the most recent quarter of record
LAND-TYPE	
OWNER	